

OM protein - protein search, using sw model

Run on: May 30, 2008, 10:13:07 ; Search time 99 Seconds
(without alignments)
6154.036 Million cell updates/sec

Title: US-10-574-297-34
Perfect score: 5178
Sequence: 1 MYLDRFRQCPSSLQIFPSAW.....AAGDRINIPWSFHAGYRYSF 1010

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 3405708 seqs, 601879884 residues

Total number of hits satisfying chosen parameters: 3405708

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_200711:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000:*
4: ~~~~~~

4: geneseqp2001:*
 5: geneseqp2002:*
 6: geneseqp2003a:*
 7: geneseqp2003b:*
 8: geneseqp2004a:*
 9: geneseqp2004b:*
 10: geneseqp2005:*
 11: geneseqp2006:*
 12: geneseqp2007:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	%			DB	ID	Description
	Score	Match	Length			
1	5178	100.0	1010	10	ADZ46880	Adz46880 BASB232 p
2	5109	98.7	998	6	ABU22871	Abu22871 Protein e
3	1462	28.2	271	2	AAW27704	Aaw27704 B. pertus
4	1309	25.3	910	5	AAE16184	Aae16184 Bordetell
5	1307	25.2	910	5	AAE17146	Aae17146 Bordetell
6	1307	25.2	910	10	ADZ46876	Adz46876 BASB232 p
7	1304.5	25.2	915	10	ADZ39252	Adz39252 Pertussis
8	1299.5	25.1	911	2	AAE14320	Aae14320 Pertactin
9	1293.5	25.0	911	5	AAE16183	Aae16183 Bordetell
10	1280	24.7	922	2	AAR25578	Aar25578 Bordetell
11	1280	24.7	922	5	AAE16185	Aae16185 Bordetell
12	1274.5	24.6	911	2	AAR26503	Aar26503 prn prote
13	1238.5	23.9	768	6	ABU23088	Abu23088 Protein e
14	1192.5	23.0	759	10	ADZ46890	Adz46890 BASB232 p
15	1190.5	21.7	515	10	ADZ46880	Adz46880 BASB232 p

15	1122.5	21.7	515	10	ADZ46892	Adz46892 BASB232 p
16	1091.5	21.1	922	2	AAR14321	Aar14321 Pertactin
17	1023	19.8	915	10	ADZ46878	Adz46878 BASB232 p
18	804	15.5	274	2	AAW27708	Aaw27708 B. pertus
19	804	15.5	274	2	AAW27709	Aaw27709 B. parape
20	780	15.1	773	6	ABU41966	Abu41966 Protein e
21	778	15.0	397	10	ADZ46894	Adz46894 BASB232 p
22	761.5	14.7	647	10	ADZ46882	Adz46882 BASB232 p
23	756.5	14.6	712	6	ABU39697	Abu39697 Protein e
24	707.5	13.7	482	10	ADZ46888	Adz46888 BASB232 p
25	664.5	12.8	1569	4	AAG98842	Aag98842 E. coli g
26	664.5	12.8	1569	6	ABU15202	Abu15202 Protein e
27	658.5	12.7	1571	10	AE911292	Aeb911292 Microbial
28	658.5	12.7	1571	10	AED82060	Aed82060 Hyperimmu
29	658	12.7	1567	10	AED82494	Aed82494 Hyperimmu
30	547	10.6	1606	4	ABG30355	Abg30355 Novel hum
31	543.5	10.5	836	10	AE911317	Aeb911317 Microbial
32	543.5	10.5	836	10	AED82041	Aed82041 Hyperimmu
33	543.5	10.5	863	10	AED82480	Aed82480 Hyperimmu
34	542.5	10.5	836	6	ABU28689	Abu28689 Protein e
35	539.5	10.4	759	6	ABU49929	Abu49929 Protein e
36	524.5	10.1	955	6	ABU15423	Abu15423 Protein e
37	523.5	10.1	638	6	ABU50354	Abu50354 Protein e
38	522.5	10.1	955	10	AE911469	Aeb911469 Microbial
39	514.5	9.9	1430	6	ABU50527	Abu50527 Protein e
40	464.5	9.0	599	8	ADR72567	Adr72567 Amino aci
41	464.5	9.0	599	11	AEH12532	Aeh12532 Bordetell
42	464.5	9.0	599	11	AEK91792	Aek91792 Bordetell
43	464.5	9.0	599	11	AEI95088	Aei95088 Bordetell
44	463	8.9	602	8	ADR72565	Adr72565 Amino aci
45	463	8.9	602	11	AEH12530	Aeh12530 Bordetell

ALIGNMENTS

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RESULT 1
ADZ46880
ID   ADZ46880 standard; protein; 1010 AA.
XX
XX
AC   ADZ46880;
XX
DT   15-JUN-2007 (revised)
DT   30-JUN-2005 (first entry)
XX
DE   BASB232 polypeptide encoded by Orf17.
XX
KW   BASB232; vaccine; bacterial infection; bordetella pertussis infection;
KW   antibacterial; BOND_PC; serum resistance protein;
KW   serum resistance protein [Bordetella pertussis Tohama I]; brkA; BrkA;
KW   GO7155.
XX
OS   Bordetella pertussis.
XX
PN   WO2005032584-A2.
XX
PD   14-APR-2005.
XX
PF   01-OCT-2004; 2004WO-EP011082.
XX
PR   02-OCT-2003; 2003CB-00023112.
PR   02-OCT-2003; 2003GB-00023113.
XX
PA   (GLAX ) GLAXOSMITHKLINE BIOLOGICALS SA.
XX
PI   Castado C, Denoel P, Godfroid F, Poolman J;
v v

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XX WPI: 2005-296056/30.
 DR N-PSDB; ADZ46879.
 DR PC:NCBI; gi562026.
 XX
 PT Immunogenic composition, comprises polypeptide of Bordetella pertussis or
 PT mixture of different B.pertussis, antigens, useful in Bordetella disease
 PT treatments.
 XX
 PS Claim 3; SEQ ID NO 34; 172pp; English.
 XX
 CC The invention relates to BASB232 polypeptides (SEQ Group 2), and the
 CC polynucleotide sequences (SEQ Group 1) encoding them. The invention also
 CC relates to an immunogenic composition, comprising a B. pertussis BASB232
 CC polypeptide or a mixture of 2-9 or 10 different B. pertussis antigens,
 CC chosen from Bordetella autotransporter protein, Bordetella iron
 CC acquisition protein, Bordetella lipoprotein, Bordetella adhesin and
 CC Bordetella toxin/invasin, and an excipient. Also described is a vaccine
 CC comprising the above immunogenic composition. The immunogenic composition
 CC is useful in the preparation of a medicament for use in the treatment or
 CC prevention of Bordetella disease such as whooping cough. The immunogenic
 CC composition and vaccine are useful for treating or preventing Bordetella
 CC infections such as B. pertussis, B. parapertussis or B. bronchiseptica
 CC infections, by administering the vaccine to a host. This sequence
 CC represents a BASB232 polypeptide of the invention.
 CC
 CC Revised record issued on 15-JUN-2007 : Enhanced with precomputed
 CC information from BOND.
 XX
 SQ Sequence 1010 AA;

Query Match 100.0%; Score 5178; DB 10; Length 1010;
 Best Local Similarity 100.0%; Pred. No. 2.6e-299;
 Metadata 1010; Annotations 0; Mismatches 0; Indels 0; Gaps 0.

Qy 961 GAGRGRVELGAGVDAALGKGHNLYASIEYAAGDRINIPWSFHAGRYSF 1010
 Db 961 GAGRGRVELGAGVDAALGKGHNLYASIEYAAGDRINIPWSFHAGRYSF 1010

RESULT 2

ABT22871

ID ABU22871 standard; protein: 998 AA.

AC ABU22871;

DT 19-JUN-2003 (first entry)

DE Protein encoded by Prokaryotic essential gene #8398.

KW Antisense; prokaryotic essential gene; cell proliferation; drug design.

05 Bordetella pertussis.

PN WO200277183-A2.

PD 03-OCT-2002.

21-MAR-2002: 2002WO-US009107.

PR 21-MAR-2001: 2001US-00815242.

PR 06-SEP-2001; 2001US-00948993.

PR 25-OCT-2001; 2001US-0342923P.

PR 08-FEB-2002; 2002US-00072851.

PR 06-MAR-2002; 2002US-0362699P.

PA (ELIT-) ELITRA PHARM INC.

[illegible]

PI Wang L, Zamudio C, Malone C, Haselbeck R, Ohlson KL, Zyskind JW;
 PI Wall D, Trawick JD, Carr GJ, Yamamoto R, Forsyth RA, Xu HH;
 XX WPI; 2003-029926/02.
 DR N-PSDB; ACA26741.
 XX
 PT New antisense nucleic acids, useful for identifying proteins or screening
 PT for homologous nucleic acids required for cellular proliferation to
 PT isolate candidate molecules for rational drug discovery programs.
 XX
 PS Claim 25; SEQ ID NO 50795; 1766pp; English.
 XX
 CC The invention relates to an isolated nucleic acid comprising any one of
 CC the 6213 antisense sequences given in the specification where expression
 CC of the nucleic acid inhibits proliferation of a cell. Also included are:
 CC (1) a vector comprising a promoter operably linked to the nucleic acid
 CC encoding a polypeptide whose expression is inhibited by the antisense
 CC nucleic acid; (2) a host cell containing the vector; (3) an isolated
 CC polypeptide or its fragment whose expression is inhibited by the
 CC antisense nucleic acid; (4) an antibody capable of specifically binding
 CC the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular
 CC proliferation or the activity of a gene in an operon required for
 CC proliferation; (7) identifying a compound that influences the activity of
 CC the gene product or that has an activity against a biological pathway
 CC required for proliferation, or that inhibits cellular proliferation; (8)
 CC identifying a gene required for cellular proliferation or the biological
 CC pathway in which a proliferation-required gene or its gene product lies
 CC or a gene on which the test compound that inhibits proliferation of an
 CC organism acts; (9) manufacturing an antibiotic; (10) profiling a
 CC compound's activity; (11) a culture comprising strains in which the gene
 CC product is overexpressed or underexpressed; (12) determining the extent
 CC to which each of the strains is present in a culture or collection of
 CC strains; or (13) identifying the target of a compound that inhibits the
 CC multiplication of an organism.

CC proliferation of an organism. The antisense nucleic acids are useful for
CC identifying proteins or screening for homologous nucleic acids required
CC for cellular proliferation to isolate candidate molecules for rational
CC drug discovery programs, or for screening homologous nucleic acids
CC required for proliferation in cells other than *S. aureus*, *S. typhimurium*,
CC *K. pneumoniae* or *P. aeruginosa*. The present sequence is encoded by one of
CC the target prokaryotic essential genes. Note: The sequence data for this
CC patent did not form part of the printed specification, but was obtained
CC in electronic format directly from WIPO at
CC ftp.wipo.int/pub/published/pct_sequences

SO Sequence 998 AA:

Query Match	98.7%	Score 5109;	DB 6;	Length 998;
Best Local Similarity	99.9%	Pred. No. 3.3e-295;		
Matches 997:	Conservative 1;	Mismatches 0;	Indels 0;	Gaps 0;

QY 13 LQIPRSWRLHALAAALAGMARLAPAAAQAPQPPVAGAPHAQDAGQEGEFDHRDNTLI 72

1 MQTPRSWRLHALAAALAGMARLAPAAAQPOPPVAGAPHADAGGEGFHRDNTLI 60

QV 73 AVFDDGVGINLDDDPDELGETAPPTLKDIHISVEHKNPMSKPAIGVRVSGAGRALTLAGS 132

D0 61 AVFDDGVGINDDDDDELGETAPTCLKIHSVEHKPNMSKPAICGVRSAGRAUTLAGS 120

QV 133 TIDATEGIPAVRRGGTLELDGVTVAGGEGMEPMTVSDAGSRLSVRGGVLGGEAPGVGL 192

D6 121 TDATEGIPAVVRGGTLELDGTVVAGGEMPTVSDGSRVSVRGGVHGGEAPGVGL 180

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QY 193 VRAAQQGQASIATLQSLGPALADGGSISVAGGSIDMDMGFPFPPPPPLPGAPLAA 252
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Db 181 VRAQGGQASIIDATLOSILGPALIIADGGSISVAGGSIDMDMGCFPPPPPLPGAPLAA 240

Qy	253	HPPLDRVAAVHACGDGKVTLREVALRAHGPOATGVYAYMPGSEITLOGGTIVSQVDDGAG	312
Db			
Qy	241	HPPLDRVAAVHACGDGKVTLREVALRAHGPOATGVYAYMPGSEITLOGGTIVSQVDDGAG	300
Db			
Qy	313	VVAGALLDALPPGGTVRLDGTITYSTDGANTDAVLVRGDAARAEEVNVTILRTAKSLAAGV	372
Db			
Qy	301	VVAGALLDALPPGGTVRLDGTITYSTDGANTDAVLVRGDAARAEEVNVTILRTAKSLAAGV	360
Db			
Qy	373	SAQHGRKVTLRTRIETAGAGAEGISVLGFEPQSGSPASVDMMOGGSITTTGNRAAGIAL	432
Db			
Qy	361	SAQHGRKVTLRTRIETAGAGAEGISVLGFEPQSGSPASVDMMOGGSITTTGNRAAGIAL	420
Db			
Qy	433	THGSARLEGVAVRAEAGSSAAQLANGTILVSAGSLASQAOSGAISVTDTPKLMPGALIAS	492
Db			
Qy	421	THGSARLEGVAVRAEAGSSAAQLANGTILVSAGSLASQAOSGAISVTDTPKLMPGALIAS	480
Db			
Qy	493	STVSVRLTDGATAQGNGVFLOQHSTIPVAVALES GALARGDIVADGNKPLDAGISLSVA	552
Db			
Qy	481	STVSVRLTDGATAQGNGVFLOQHSTIPVAVALES GALARGDIVADGNKPLDAGISLSVA	540
Db			
Qy	553	SGBAHGATQVLOSATLKGKTWVNADSRVODMSMRGGVEFPQAPAEASYKTLTLQTL	612
Db			
Qy	541	SGBAHGATQVLOSATLKGKTWVNADSRVODMSMRGGVEFPQAPAEASYKTLTLQTL	600
Db			
Qy	613	DGNVGTVLTNVAAGNDQLRVTRGADGCHRVLVNRNAGEADSRGARGLGVHTGOQNAT	672
Db			
Qy	601	DGNVGTVLTNVAAGNDQLRVTRGADGCHRVLVNRNAGEADSRGARGLGVHTGOQNAT	660
Db			
Qy	673	FRLANVGKAVDLGTWRYS LAEDPKTHVWSLQRAGQALS GAANA AVNAAD LSSIALAESNA	732
Db			
Qy	661	FRLANVGKAVDLGTWRYS LAEDPKTHVWSLQRAGQALS GAANA AVNAAD LSSIALAESNA	720
Db			
Qy	733	LDKRLGELRLRADAGGPWARTFSEROQI SNRHARYDQT VSGLE IGLDRGWSAGSGRWYA	792

Db	721	LDKRLGELRLRADAGGFWARTFSERQQISNRHARAYDQVTSGLIEIGLDGRWSASGGRWYA	780
QY	793	GGLGYTYADRTYPGDGGKVKGLHVGYYAAVVGDDGYLDTVLRLGRYDQQYNIAGTDG	852
Db	781	GGLGYTYADRTYPGDGGKVKGLHVGYYAAVVGDDGYLDTVLRLGRYDQQYNIAGTDG	840
QY	853	GRVTADRTSGAAWSLEGGRRFELPNDFWFAEQAEVMLWRTSKRRYPASNGLRVKVDANT	912
Db	841	GRVTADRTSGAAWSLEGGRRFELPNDFWFAEQAEVMLWRTSKRRYPASNGLRVKVDANT	900
QY	913	ATLGRGLRFRGRIALAGGNIVQYARLGWTQEFKSTGDRVINGIGHAGAGRHGRVELGA	972
Db	901	ATLGRGLRFRGRIALAGGNIVQYARLGWTQEFKSTGDRVINGIGHAGAGRHGRVELGA	960
QY	973	GVDAALGKGHNLYASYEYAAAGDRINIPWSFHAGYRYSF	1010
b	961	GVDAALGKGHNLYASYEYAAAGDRINIPWSFHAGYRYSF	998

RESULT 3

AAW27704
ID AAW27704 standard; protein; 271 AA.

AC AAW27704:

DT 08-MAY-1998 (first entry)

DE B. pertussis BrkA protein autotransporter membrane integration region.

BrkA; autotransporter; Gram-negative bacteria; diagnostic; therapy;
KW surface presented polypeptide.

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E

OS Bordetella pertussis.
XX
PN W09735022-A1.
XX
PD 25-SEP-1997.
XX
PF 15-MAR-1996; 96WO-EP001130.
XX
PR 15-MAR-1996; 96WO-EP001130.
XX
PA (PLAC) MAX PLANCK GES FOERDERUNG WISSENSCHAFTEN.
XX
PI Maurer J, Jose J, Meyer TF;
XX
DR MPI; 1997-480227/44.
DR N-PSDB; AAT88141.
XX
PT Presentation of peptide(s) on surface of Gram-negative bacteria - via
PT transformation with vector encoding signal peptide, presented peptide and
PT transporter domain of auto-transporter, producing peptide libraries for
PT epitope mapping.
XX
PS Claim 8; Fig 8; 84pp; German.
XX
CC This sequence represents the Bordetella pertussis BrkA autotransporter
CC membrane integration region. This region is involved in a novel method
CC which allows the presentation of stable fusion polypeptides on the
CC surface of Gram-negative bacteria which can be released into the
CC surrounding media. The method can be used to produce a variegated
CC population of surface-presented polypeptides, so that bacteria expressing
CC polypeptides with particular properties can be identified and
CC simultaneously selected, e.g. for epitope mapping or selection of ligands
CC with the highest affinity for antibodies, major histocompatibility
CC complex (MHC) molecules or other components of the immune system

CC complex (MHC) molecules or other components of the immune system.
 CC Selected polypeptides can be used diagnostically, e.g. to screen sera or
 CC antibody banks, and (poly)peptide expressing cells may be used as live
 CC vaccines. They may also be used therapeutically, e.g. when the
 CC polypeptide is an antibody, to remove or concentrate pollutants,
 CC inactivate toxins, prepare and process food, prepare washing compositions
 CC and label cells. Selected bacteria can be stored, reproduced and
 CC replicated on a large scale as individual clones
 XX
 SO Sequence 271 AA:

Query Match	28.2%;	Score 1462;	DB 2;	Length 271;
Best Local Similarity	100.0%;	Pred. No. 6.8e-79;		
Matches 271;	Conservative	0;	Mismatches 0;	Indels 0;
				Gaps 0;

Qy	740	LRLRADAGGEWARTFSERQOISNRHARAYDQTVSGLEIGLDRCWSASGGRWYAGLLGYT	799
Db	1	LRLRADAGGEWARTFSERQOISNRHARAYDQTVSGLEIGLDRCWSASGGRWYAGLLGYT	60
Qy	800	YADRTYPGDGGKVKGLHVGGYAAVYDGGYYLDTVLRGRYDQOYNIAGTGGRVTDY	859
Db	61	YADRTYPGDGGKVKGLHVGGYAAVYDGGYYLDTVLRGRYDQOYNIAGTGGRVTDY	120
Qy	860	RTSGAAMSLEGGRRFELPNDWFADFQAEVMLWRTSGKRYRASNGLRVKVDANTATLGRG	919
Db	121	RTSGAAMSLEGGRRFELPNDWFADFQAEVMLWRTSGKRYRASNGLRVKVDANTATLGRG	180
Qy	920	LPFGRRIALAGGNIVQPYARLGWTQEFKSTGDRVINGIGHAGRGRHGRVELGAGVDAALG	979
Db	181	LPFGRRIALAGGNIVQPYARLGWTQEFKSTGDRVINGIGHAGRGRHGRVELGAGVDAALG	240
Qy	980	KGNHLYASYEYAAGDRINIPWSFHAGYRYSF	1010

271

Db 241 KGHNLASYEYAAGRINIPWSPHAGYRYSF 271

RESULT 4
AAE16184

ID AAE16184 standard; protein; 910 AA.

XX

AC AAE16184;

XX

DT 15-JUN-2007 (revised)

DT 26-MAR-2002 (first entry)

XX

DE Bordetella pertussis pertactin outer membrane protein, p.69.

XX

KW Pertactin; PRN: outer membrane protein; vaccine; Bordetella infection;
KW therapy; antibiotic; antibacterial; p.69; BOND_PC; pertactin;
KW pertactin [Bordetella pertussis]; G05524; G07155; G09405.

XX

OS Bordetella pertussis.

XX

Key	Location/Qualifiers
FT Region	254..309
FT	/note= "Pertactin region I"
FT Region	568..609
FT	/note= "Pertactin region II"
XX	
PN	WO200190143-A2.
XX	
PD	29-NOV-2001.
XX	
PF	23-MAY-2001; 2001WO-EF006457.
XX	
PR	25-MAY-2000; 2000US-0206969P.

vv

XX
PA (INSP) INST PASTEUR.
XX
PI Guiso-Maciouf N, Boursaux-Eude C;
XX
DR WPI; 2002-097639/13.
DR N-PSDB; AAD26441.
DR PC:NCBI; gi4572563.
XX
PT Polypeptides containing polymorphisms of the repeated regions of
PT pertactin in Bordetella species, useful in immunogenic compositions for
PT treating infections caused by Bordetella and in diagnostic methods.
XX
PS Disclosure; Page 31; 47pp; English.
XX
CC The present invention relates to Bordetella bronchiseptica pertactin
CC (outer membrane protein) or their fragments. Pertactin (PRN) is used as
CC vaccine. Pertactin antibody is useful for treating Bordetella infections
CC and used to detect Bordetella antigens in biological preparations or in
CC purifying corresponding proteins, glycoproteins or their mixtures when
CC used in affinity chromatographic columns. Pertactin is useful as antigens
CC to identify antibodies to Bordetella in materials such as human or other
CC animal tissue and human or other animal cells, as well as biological
CC fluids, such as human or other animal body fluids, including human sera,
CC and to determine the concentration of Ab in those materials. Thus the
CC antigens can be used for qualitative or quantitative determination of
CC Bordetella in a material. The present sequence is B. pertussis pertactin
CC outer membrane protein, p.69
CC
CC Revised record issued on 15-JUN-2007 : Enhanced with precomputed
CC information from BOND.
XX
SQ Sequence 910 AA;

Query Match	25.3%;	Score 1309;	DB 5;	Length 910;
Best Local Similarity	36.7%;	Pred. No. 3.6e-69;		
Matches	332;	Conservative 112;	Mismatches 299;	Indels 162; Gaps 22;

QY	247	GAPLAAPHPLDRVAAVHAGQ-----DGKVTLREVALRAHGPAQTGYAYMPGS	294
		: : :	: : : :
Dd	27	GAAPAAHADWNQSIKTERQHGIHQSGDPGGVRTASGITIKVYSRQAQGILLNPAA	86
		:	:
QY	295	EITLQGGTVSVQG---DDGAGVVAGAGLLDALPPGTVRLDGTTVSTDGANTD----	347
		: : : : :	: : : :
Dd	87	ELQFRNGSVTSSQLSDGIRRFGLGVTKA----GKLVDHATLANVGDTWDDDGIALY	142
		:	:
QY	348	VRGDAAAEVNTVLRTAKSLAAGSAQHGRVTLTROTRIETAGAGAEGISVLGF----	403
		: : : :	: : : :
Dd	143	VAGEQAQASIADSTLQG----AGGVQIERGANVTQRSAIVDGGHLIGALSQLPEDLP	198
		:	:
QY	404	-----PQSGFSFVDMOGGSITT-----TGNNRAAGIALTHGS--ARLEGVA	443
		: : :	: : : :
Dd	199	SRVLRDNTVTAVPASGA--PAAVSVLGASELTLDGGHITGRRAGVAAMQGAHVHLQ	257
		:	:
QY	444	VR-----AEGSSS-----	452
		: :	:
Dd	258	IIRGDAPAGAVPGGAVPGGFGPVLDGWGVDSVSSVELAQSIIVEAPEL	317
		:	:
QY	453	--AAQLANGTLVVSAAGLSAQSATSVDTPKLMPGALASSVTSVRLTDGATAGGNG	510
		: : : : :	: : : :
Dd	318	GAAIRVGRGARTVSGGSLSAPHNVLETGARRFAPQA--APLSITLQAGAHAGQ--K	372
		:	:
QY	511	VFLQOHSITIPVALESGLARGDIVA-----DGNK--PLDAGISLSVASGAAMHGATQ	562
		: : : :	: : : :
Dd	373	ALLRYLVPEPKVLT.LTGGADAQGDIVATELPSIPGTSIGPLD-----VALASQARTGATR	428
		:	:

Qy	563	VLQSATLKGKGTWVNVNADSRVQDMSMRG-GRVEFQAPAPESAYKTLTLQTLDNGGVFVLN	621
Db	429	AVDSLSI-DNATWMTDNSVNGALRLASDGSVDFQQPAEAGRFKVLTVNTLAGSGGLFRWN	487
Qy	622	TNVAAGQNDQLRVTGRADGQHRVLRVNRAGGEADSRGARLGLVHTQGGNATFRLANVGKA	681
Db	488	VFADLGLSKLVVMQDASGQHRLWVRNSGSEPASANTILL-LVQTPRGSAAFTLANKGK	546
Qy	682	VDLGTWRYSLAEDPKTHVWSL-----QRAQGA	708
Db	547	VDIGYRYRLAANGNQ-WSLVGAKAPPAPKPAFQPGPQPPQPEAPAPQPPAGRE	605
Qy	709	LSGAANAAVNAADL-----SSIALAESNALDKRLGELRLRADAGGPWARTFSERQQISNRHA	765
Db	606	LSAANAAVNTGGVGLASILWYAESNALSKRLGELRLNPDAGGANGRCFAQRCQLDNRAQ	665
Qy	766	RAYDQTVSGLEIGLDRGWSASGRWYAGLLGYTYADRTYPGDGGKVKGLHVGGYAAVY	825
Db	666	RRFDQKVAGFELGADHAVAVAGGRWHLGLLAGYTRGDRGFTGDGGGHTDSVHVGGYATYI	725
Qy	826	GDGGYYLDTVLRLGRYDQYNIAGTDGGRYTADYRTSGAAWSLEGRFRFELENDMFAEPQ	885
Db	726	ADSGFYLDATLRASLENDFKVAGSDGYAVKGYKRYTHGVASLEAGRRFTHADGWFLEPQ	785
Qy	886	AEVMLWRYSKKRYRASNGLRVKVDANTATLGRGLRFRORRIALAGNIVQPYARLGWTQE	945
Db	786	AELAVFRAGGAYRAANGLRVRDGGSSVLRGLGLEVKRRELAGGRQVQPIKASVLQE	845
Qy	946	FKSTGDVRINGTGHAGAGRHGRVYELGAGVDAAALCKGHNLAYASYEAAGDRINIPWSFHAG	1005
Db	846	FDGAGTVHTINGIAHRTELCTRaelGLGMAAALGRGHSIYASYEYSGKGFKLAMPWTFHAG	905
Qy	1006	YRYSF	1010

||||:

Db 906 YRYSW 910

RESULT 5
AAE17146

ID AAE17146 standard; protein; 910 AA.
XX
AC AAE17146;
XX
DT 15-JUN-2007 (revised)
DT 18-APR-2002 (first entry)
XX
DE Bordetella pertussis pertactin (Prnl) protein.
XX
KW Pertactin; prnl; antibacterial; immunostimulant; antimicrobial; vaccine;
KW diphtheria; tetanus; polio; Haemophilus influenza b infection; therapy;
KW immune response; BOND_PC; pertactin precursor;
KW pertactin precursor [Bordetella pertussis Tohama I]; prn;
KW pertactin outer membrane protein;
KW pertactin outer membrane protein [Bordetella pertussis]; Pertactin;
KW Pertactin [Bordetella pertussis]; P.69A protein;
KW P.69A protein [Bordetella pertussis]; G05515; G07155; G09405; G016020;
KW G019867.
XX
OS Bordetella pertussis.
XX
FH Key Location/Qualifiers
FT Region 597..604
FT /note= "Conserved region"
XX
PN W0200200695-A2.
XX
XX

PD 03-JAN-2002.
 XX
 PF 29-JUN-2001; 2001WO-NL000493.
 XX
 PR 30-JUN-2000; 2000EP-00202309.
 XX
 PA (NEWE-) NEDERLANDEN MIN WELZIJN.
 XX
 PI Mooi FR;
 XX
 DR WPI; 2002-139897/18.
 DR PC:NCEI; gi464364.
 DR PC:SWISSPROT; P14283.
 DR PC:BIIND; 330939, 330940.
 XX
 PT New polypeptides derived from Bordetella pertussis pertactin, useful as a
 PT vaccine against infections caused by Bordetella strains, and other
 PT infectious diseases of mammals, e.g. diphtheria, tetanus, or polio.
 XX
 PS Claim 11; Page 35-38; 52pp; English.
 XX
 CC The invention relates to polypeptides derived from Bordetella pertussis
 CC pertactin (Pnrl). The polypeptide is useful in the preparation of
 CC vaccines against B. pertussis, B. parapertussis, B. bronchiseptica and
 CC other infectious diseases of mammals including diphtheria, tetanus, polio
 CC and infections caused by Haemophilus influenza b. The polypeptide is
 CC especially useful for eliciting an immune response against Bordetella sp.
 CC Antibodies against the polypeptide may be used for pharmaceutical and/or
 CC diagnostic purposes, particularly for treating or preventing infections
 CC caused by Bordetella pertussis or Bordetella parapertussis. The present
 CC sequence is B. pertussis pnr1 protein
 CC
 CC Revised record issued on 15-JUN-2007 : Enhanced with precomputed
 CC information from NCBI

Db 846 FDGACTVHTNGIAHRTLRGTRAEGLGMAALGRGHSLYASYEYSGFKLAMPWTFHAG 905

Qy 1006 YRYSF 1010

||||:

Db 906 YRYSW 910

RESULT 6

ADZ46876

ID ADZ46876 standard; protein; 910 AA.

XX

AC ADZ46876;

XX

DT 15-JUN-2007 (revised)

DT 30-JUN-2005 (first entry)

XX

DE BASB232 polypeptide encoded by Orf15.

XX

KW BASB232; vaccine; bacterial infection; bordetella pertussis infection;

KW antibacterial; BOND_PC; pertactin precursor;

KW pertactin precursor [Bordetella pertussis Tohama I]; prn;

KW pertactin outer membrane protein;

KW pertactin outer membrane protein [Bordetella pertussis]; Pertactin;

KW Pertactin [Bordetella pertussis]; P.69A protein;

KW P.69A protein [Bordetella pertussis]; G05515; G07155; G09405; G016020;

KW G019867.

XX

OS Bordetella pertussis.

XX

PN W02005032584-A2.

XX

PD 14-APR-2005.

XX

XX 01 OCT 2004. 000400 0001000

PF 01-OCT-2004; 2004WO-EP011082.
 XX
 PR 02-OCT-2003; 2003GB-00023112.
 PR 02-OCT-2003; 2003GB-00023113.
 XX
 PA (GLAX) GLAXOSMITHKLINE BIOLOGICALS SA.
 XX
 PI Castado C, Denoel P, Godfroid F, Poolman J;
 XX
 DR WFI; 2005-296056/30.
 DR N-PSDB; ADZ46875.
 DR PC:NCEI; gi464364.
 DR PC:SWISSPROT; P14283.
 DR PC:BIIND; 330939,330940.
 XX
 PT Immunogenic composition, comprises polypeptide of Bordetella pertussis or
 PT mixture of different B.pertussis, antigens, useful in Bordetella disease
 PT treatments.
 XX
 PS Claim 3; SEQ ID NO 30; 172pp; English.
 XX
 CC The invention relates to BASB232 polypeptides (SEQ Group 2), and the
 CC polynucleotide sequences (SEQ Group 1) encoding them. The invention also
 CC relates to an immunogenic composition, comprising a B. pertussis BASB232
 CC polypeptide or a mixture of 2-9 or 10 different B. pertussis antigens,
 CC chosen from Bordetella autotransporter protein, Bordetella iron
 CC acquisition protein, Bordetella lipoprotein, Bordetella adhesin and
 CC Bordetella toxin/invasin, and an excipient. Also described is a vaccine
 CC comprising the above immunogenic composition. The immunogenic composition
 CC is useful in the preparation of a medicament for use in the treatment or
 CC prevention of Bordetella disease such as whooping cough. The immunogenic
 CC composition and vaccine are useful for treating or preventing Bordetella
 CC infections such as B. pertussis, B. parapertussis or B. bronchiseptica
 CC infection by administration the vaccine to a host with a disease


```
CC infections, by administering the vaccine to a host. This sequence
CC represents a BASB232 polypeptide of the invention.
CC
CC Revised record issued on 15-JUN-2007 : Enhanced with precomputed
CC information from BOND.
XX
SQ Sequence 910 AA;

Query Match      25.2%; Score 1307; DB 10; Length 910;
Best Local Similarity 36.7%; Pred. No. 4.8e-69;
Matches 332; Conservative 112; Mismatches 299; Indels 162; Gaps 22;

QY    247 GAPLIAAHPLDRVAAVHAGQ-----DGKVTIREVALRAHGFCQATGYIAYMPGS   294
       || ||| : : | : | : | | | | : : | | | : | : | : | : | :
Db     27 GAAPAAHADWNQSI VKTGERQHGIHQSDPGGVRTASGITIKVSGRQAQGILLNPAA   86

QY    295 EITLQGGTVSVQG---DDGAGVVAGAGLLDALPFGTVRLDGTTVSTDGANTD----AVL   347
       | : : || : | ||| | : : | : | : | : | : | : | : | : | :
Db     87 ELQFRNGSVTSSGQLSDDGIRRFGLGTVTVKA---GKLVDHATLANVGDTWDDDGIALY   142

QY    348 VRGDAARAEEVNVNTILRTAKSLAAGSAQHGGRVTLRQTRIETAGAGAEGISVLGFE----   403
       | : | : | : : : | : | : | : | : | : | : | : | : | : | :
Db     143 VAGEQAQASIADSTLQG---AGGVQIERGANVTVQRSAIVDGGLUHGALQSLQPDLPP   198

QY    404 -----POSGSPASVDMQCGSITT-----TGNNRAAGIALTHGS--ARLEGVA   443
       | ||| : || : : | : | | | | | | | | : | : | : | : | :
Db     199 SRVLRDINTVTPASGA--PAAVSVLGCASELTLDGGHTTGGRAAGVAAMQGVVHLORAT   257

QY    444 VR-----AEGSGSS-----AEGSGSS-----                     452
       : |
Db     258 IRRGDAPAGAVPGGAVPGGFPGFVPVLDGWYGVDVSGSSVELAQSIIVEAPEL   317

QY    453 --AAQLANGTLVVSAGSLASAQSAISTVDITPLKIMPICALASSITSVRILTGDATAGGNG   510
```

Db	318	GAAIRVGRARVTVSGSLSAPHGNVIETGGARFAPQA----	APLSITLQAGHAQG--K 372
Qy	511	VFLQOHSITPVAVALRSGALRGDIVA-----DGNK--PLDAGISLVSASGAAMHGATQ	562
Db	373	ALLYRVLPFVKLTLTGGADAQDIVATELPSIPGTSIGPLD----	VALASQARWTKATR 428
Qy	563	VLOSATLKGKGTWVNVNADSRVQDMSMRG--GRVEFQAPAP	EASVYKTLTLQTLIDGNGVFVLN 621
Db	429	AVDSLISI-DNATWMTDINSVGNALRLASDGSVDFQOPAE	AGRFKVLTVNTLAGSGLFRMN 487
Qy	622	TNVAAGNDQLRVTCRADGQHRVLVRNAGGEADSRGARLGLVHT	QGOGNATFRLANVGKA 681
Db	488	VFADLGLSKLVVMQDASGOHRLVWRNSGSEPASNTLL--LV	OTPLGSAATFTLANKDGK 546
Qy	682	VDLGTWRYSLAEDPKTHVWSL-----	QRAQQA 708
Db	547	VDIGYRYRLAANGNQ--WSLVGAKAPPAPKPAPOPGP	POPPQPOPEAPAPOPPAGRE 605
Qy	709	LSGAANAAVNAADL----SSIALAESNALDKRLGELRLRAD	AGGFWATFSEERQOISNPHA 765
Db	606	LSAANAAVNTGGVGLASTLWYAESNALSKRLGELRLNPD	GAGAWGFGFAQRQOLDNRAG 665
Qy	766	RAYDQTVSGLEIGLDRGWSASGRWYAGGLLGYTYADRTY	PGDGGKVKGLHVGYYAAVY 825
Db	666	RRFDQKVAQFELGADHAVAVAGGRWHLLGLAGLYTRGDR	GFTGDDGGHTDSVHVGGYATYI 725
Qy	826	GDGGYLDVLRLGRYDQXNIAGTDGGRVTADYRTSGA	WSLEGGRRFELPNDFWFAEPQ 885
Db	726	ADSGFYLDATLRASRUENDFKVGSDGYAVKGYRTHGV	GSLEAGRRFTHADGWFLEPQ 785
Qy	886	AEVMLWRTSGKRYRASNGLRVKVDANTATLGRLGLR	FRGRIALAGGNIVOPYARLIGWTQE 945

Db	786	AEIAVFRAGGAYRAANGLRVREDEGGSSVLGRUGLEVKRIETELAGRGVQVPIKASVLQE	845
QY	946	FKSTGDVRTNGIGHAGAGRHGRVYELGAGVDAALCKGHNLAYASYEYAAAGDRINIPWSFHAG	1005
Db	846	FDGAGTVHTNGIAHRTELCTRAELGLGMAAALGRGHSLYASYEYKSGPKLAMPWTFHAG	905
QY	1006	YRYSF 1010	
Db	906	YRYSW 910	
RESULT	7		
ADZ39252	ID	ADZ39252 standard; protein; 915 AA.	
XX	AC	ADZ39252;	
XX	XX		
DT	15-JUN-2007	(revised)	
DT	30-JUN-2005	(first entry)	
XX			
DE	Pertussis toxin P69	pertactin protein.	
XX			
KW	Prion protein; fusion protein; protein engineering; vaccine;		
KW	prion infection; cerebroprotective; infection; prion disease;		
KW	degeneration; neurological disease;		
KW	transmissible spongiform encephalopathy; Creutzfeldt Jakob disease;		
KW	neuroprotective; BSE; scrapie; kuru; P69; toxin; BOND_PC;		
KW	pertactin outer membrane protein;		
KW	pertactin outer membrane protein [Bordetella pertussis]; pertactin;		
KW	pertactin [Bordetella pertussis]; P.69B protein;		
KW	P.69B protein [Bordetella pertussis]; G07155; G05524; G09405.		
XX			
OS	Bordetella pertussis.		
XX			

XX WO2005034995-A1.
 XX
 XX PD 21-APR-2005.
 XX
 XX PF 30-SEP-2003; 2003WO-US031057.
 XX
 XX PR 10-SEP-2003; 2003US-0502032P.
 XX
 XX PA (CHIR) CHIRON CORP.
 XX
 XX PI Abrignani S, Cohen F, Michelitsch MD, Hu CY, Phelps B;
 XX
 XX DR WPI; 2005-306277/31.
 XX DR PC:NCBI; gi15213624.
 XX
 XX PT Generating antibodies specific to pathogenic prion, useful in detecting
 XX PT presence of pathogenic prion, involves administering prion chimera having
 XX PT prion protein and non-prion, beta-helical protein, to animal.
 XX
 XX PS Claim 9; SEQ ID NO 3; 173pp; English.
 XX
 XX CC The invention relates to generating (M1) antibodies specific to a
 XX CC pathogenic prion, comprising administering to an animal a prion chimera
 XX CC (PC), where PC comprises a prion protein (PrP) or its fragment or
 XX CC derivative, and a non-prion, beta-helical protein or its fragment or
 XX CC derivative. Also included are an antibody (I) specific to PC, a
 XX CC polynucleotide (P1) encoding (I), detecting the presence of pathogenic
 XX CC prion in a biological sample, a solid support comprising (I) bound to it,
 XX CC a solid support for use in immunoassay (comprising at least one antibody
 XX CC specific to pathogenic and nonpathogenic prions bound to it), a kit for
 XX CC detecting the presence of a pathogenic prion in a biological sample, an
 XX CC immunogenic composition (C1) (comprising a PC and an adjuvant, or a
 XX CC malimmunizable non-prion and an adjuvant) and detecting an immunization

CC polynucleotide encoding PC and an adjuvant) and treating or preventing
 CC (M2) a pathogenic prion related disease, involves administering PC to an
 CC animal. The PrP or its fragment or derivative has a beta-helical
 CC conformation of a pathogenic prion, and comprises *fa* fragment
 CC corresponding to amino acids 126-154 or 135-155 of the full length human
 CC or mouse prion (PrP) protein. The non-prion-beta-helical protein is a
 CC left handed helical protein or right handed helical protein. The non-
 CC prion-beta-helical protein is derived from Pertussis toxin P69 pertactin
 CC (fragments used are designated Control A or Control B) or gamma carbonic
 CC anhydrase (GCA, fragments used also designated Control A and Control B
 CC (optionally lacking the leader peptide)). The PC further comprises a tag
 CC sequence, where the tag sequence is a histidine tag sequence, and may
 CC include a tpa leader peptide (not defined). The method is useful for
 CC generating antibodies specific to pathogenic prion. The antibody is
 CC useful for raising an immune response to a pathogenic prion, which
 CC involves administering the antibody to an animal. The antibody is useful
 CC for detecting the presence of pathogenic prion in a biological sample.
 CC The immunogenic composition is useful for raising an immune response to a
 CC pathogenic prion. The methods, antibodies and compositions are useful for
 CC treating or preventing a pathogenic prion related disease including
 CC transmissible spongiform encephalopathies, Creutzfeldt-Jacob disease,
 CC Gerstmann-Straussler-Scheinker syndrome, Fatal familial insomnia, bovine
 CC spongiform encephalopathies, transmissible mink encephalopathies,
 CC scrapie, mad cow disease, feline spongiform encephalopathies and kuru.
 CC The present sequence is the full length P69 protein.

CC
 CC Revised record issued on 15-JUN-2007 : Enhanced with precomputed
 CC information from BOND.

XX
 SQ Sequence 915 AA;

Query Match 25.2%; Score 1304.5; DB 10; Length 915;
 Best Local Similarity 36.5%; Pred. No. 6.8e-69;
 Matched 222. Conserved 112. Mismatched 200. Total 522. Gap 22.

Matches 332; Conservative 112; Mismatches 299; Indels 167; Gaps 22;

QY 247 GAPIAAHPPLDRVAVAHQ-----DGKVTILREVALRAHQFOATGVAYMPGS 294
 || ||| : : | : | | : : | | | : | :
 Db 27 GAAPAAHADWNNQSVKTERQHGIHQSDPGGVRTASGTTIKVSGRQAQGILLNPAA 86
 QY 295 EITLQGGTVSVQG---DDGAGVVAGAGLLDALPPGGTVRLDGTIVSTDGANTD----AVL 347
 | : | : | : ||| | : | : | : | : | : | : | : | : | : | : | : | :
 Db 87 ELQFNQSVTSSGQLSDDGIRREFLGVTVKA----GKLIVADHATLANVGDITWDDGIALY 142
 QY 348 VRGDAARAENVNTVLRTAKSLAAGVSAQHGGRVTLRQTRITETAGAGAEGISVLGFE---- 403
 | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | :
 Db 143 VAGEQAQASIADSTLQG----AGGVQIERGANVTVQRSIVDGGIHLGALQSLQPEDLPP 198
 QY 404 -----PQSGSGFASVDMQGSITT-----TGNRAAGIALTHGS-ARLEGVA 443
 | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | :
 Db 199 SRVVLRTNVTAVPASGA-PAAVSVLGASELTLDGGHITGGRAAGVAAHQGAVVHLQRAT 257
 QY 444 VR-----AEGSGSS----- 452
 : | : | | |
 Db 258 IRRGDAPAGGAVPGGAVPGFGFGFGGFGFVLDGWYGVDSGSSVELAQSTV 317
 QY 453 -----AAQLANGTLVVAGSLASQSGAISVTDTPLKLMFGALASSTVSVRLTDGATA 505
 | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | :
 Db 318 EAPELGAIRVGRGARVTVSGSLSAPHGNVIETGGARRFAPQA---APLSITLQAGAHA 374
 QY 506 QGGNGVFLQQHSTIPYAVALESGALARGDTVA-----DGNK--PLDAGISLSVASGAAM 557
 | | : : | : | : | : | : | : | : | : | : | : | : | : | : | : | :
 Db 375 QG--KALLYRVLPPEPVKLTLTGGADAQGDIVATELPSIPGTSIGPLD-----VALASQARW 428
 QY 558 HGATQVLQASATLKGGTWVNADSRVQDMSMRG--GRVEFOQAPAPEASYKTLTLQTLDDNG 616
 ||| : | : ||| : | : : | : | : | : | : | : | : | : | : | : | : | :
 Db 429 TGATRAVDSLST-DNATWMTDMSNVGALKLADSGSDVDFQQPAEAGRFKVLTVNTLAGSG 487

QY	617	VFLNTNVAAGQNDQLRVTRADQGHRLVVRNAGGEADSRGARLGLVHTQGQNAIFRLA	676
Db	488	LFRVNVFADLGLSDKLVVMDASGQHRLVWRNSGSEPASANTLL-LVQTPLGSAATFLA	546
QY	677	NVGRAVDLGTWRYSLAEDPKTHWSSL-----Q	703
Db	547	NKDGKVDICTYRYLAAANGQ--WSLVGAKAPPAPKAPQPCQPQPPOPEAPQP	605
QY	704	RAGQALSGAANAAVNAADL---SSIALAESNALDKRUGELRLRADAGPWARIFSEROQI	760
Db	606	PAGRELSAANAAVNTGGVGLASTLWVAESNALSKRUGELRLNPADGAGWGRGFAORQOL	665
QY	761	SNRHARAYDOTVSGLEIGLDGRWSASGRWYAGGLGYTYADRTYDGGGGKVKGLHVG	820
Db	666	DNAGRRRDPQVAGFELGADHAVAVAGRWHLGLAGYTRDGRGTGDSGGHTDSVHVG	725
QY	821	YAAVYVGDGGYLDTVLRLGRYDQYNIAGTDGGRVTADYRTSGAAWSLEGGRFELPNDW	880
Db	726	YATYIADSGFYLDA TLRASRLNDFK VAGSDGYAVKGYRTHGVGASLEAGRRFTHADGW	785
QY	881	FAEPOAEVMLWRTSGKRYRASNLVRKVKVDANTATLRLGLRFRGRIALAGNIVQPYARL	940
Db	786	FLEPOAELAVFRAGGGAYRAANGLRVRDEGSSVLRLGLEVGKRIELAGGRQVQPYKA	845
QY	941	GWTOEFKSTGTVRTNGIGHAGAGRHGRVFLGAVDAAALGKGHNLVASYEYAAAGDRINIPW	1000
Db	846	SVLQEFDGAGTVHTNGIAHRTTELGRTRAEELGLGMAAALGRGHSLSVASYEYSGPKLAMPW	905
QY	1001	SFHAGYRYSF	1010
Db	906	TFHAGYRYSW	915

RESULT 8

AAR14320

ID AAR14320 standard; protein; 911 AA.

XX

AC AAR14320;

XX

DT 25-MAR-2003 (revised)

DT 20-JAN-1992 (first entry)

XX

DE Pertactin antigen P.68.

XX

KW Pertactin; Pichia; B. pertussis; B. parapertussis.

XX

OS Bordetella bronchiseptica.

XX

FH Key Location/Qualifiers

FT Peptide 266..270

FT /label= repeat

FT Peptide 271..275

FT /label= repeat

FT Peptide 570..572

FT /label= repeat

FT Peptide 574..576

FT /label= repeat

FT Peptide 578..580

FT /label= repeat

FT Peptide 581..583

FT /label= repeat

FT Peptide 584..586

FT /label= repeat

FT Peptide 587..589

FT /label= repeat

FT

FT

FT Peptide 599. .601
 FT /label= repeat
 XX
 PN W09115571-A.
 XX
 PD 17-OCT-1991.
 XX
 PF 02-APR-1990; 90GB-00007416.
 XX
 PR 02-APR-1990; 90GB-00007416.
 XX
 PA (WELL) WELLCOME FOUND LTD.
 XX
 PI Clare JJ, Romanos MA;
 XX
 DR WPI; 1991-325214/44.
 DR N-PSDB; AAQ14319.
 XX
 PT Pichia microorganism transformants - for production of Bordetella
 PT pertactin antigens for whooping cough vaccines.
 XX
 PS Disclosure; Fig 1B; 38pp; English.
 XX
 CC Pichia microorganisms are transformed for the expression of pertactin
 CC antigens. DNA sequence used are represented in AAQ14319-20 encoding the
 CC B. bronchiseptica P.68 and B. paraptussis P.70 antigen respectively or
 CC the B. pertussis P.69 encoding sequence described by I.G. Charles et al.
 CC Proc. Natl. Acad. Sci. USA, Vol. 80:3554-3448 (1989). (Updated on 25-MAR-
 CC 2003 to correct PA field.)
 XX
 SQ Sequence 911 AA;

Query Match 25.1%; Score 1299.5; DB 2; Length 911;
 Date: 1991-01-14 10:00:00

Best Local Similarity 36.6%; Pred. No. 1.3e-68;
Matches 330; Conservative 117; Mismatches 300; Indels 155; Gaps 23;

QY	247	GAPLAAHPPLDRVAHVAGQ-----DGKVTILREVALRAHGPOATGVVAYMPGS	294
		: : : : : : : : : : :	
Db	27	GAAPAAHADWNQSIKAGEROHGIHKQSDGAGVRTATGITIKVSGRAQGVLENPAA	86
QY	295	EITLOGGTVSVQG---DDGAGVAGAGLLDALPGGTVRLDGTTVS---TDGANTD--AVL	347
		: : : : : : : : : : :	
Db	87	ELRFQNGSVTSSGQLFDEGVRRFLGTIVTKA---GKLVADHATLANVSDTRDDDGIALY	142
QY	348	VRGDAARAENVNTVLTAKSLAAGVSAHQHGRVTLRQTRIETAGAGAEGISVLGFE----	403
		: : : : : : : : : : :	
Db	143	VAGEQAQASIASTLQG---AGVVRVERGANVTIVQSRITVDGGHIGTLQLOPEDLPP	198
QY	404	-----PQSGSGPASVDMQGGSIIT-----TGNPAAAGIALTHGS--ARLEGVA	443
		: : : : : : : : : :	
Db	199	SRVLGDTSVTAVPASGA--PAASVVFCANELITVDGGHITGGRAAGVAAMDGAIVHLQRA	257
QY	444	VR---AEGSGS-----SAAQIA-----NG	459
		: : : : : : : : : :	
Db	258	IRRGDAPAGGAVPGGAVPGGFGPLLDGWYGVDSVSDSTVDLAQSIVEAPQLGAIRAGRG	317
QY	460	TLVVSAGSLASQSGAISVITDTPKLMPGALASSTVSVRLTDGATAQGGNGVFLQOHS	519
		: : : : : : : : : :	
Db	318	RVTVSGGSLSPHNGVNIETGGARRPPPPA---SPLSITLQAGARAQ--RALLYRVLPE	372
QY	520	PVAVALESGALARGDIVADGNKPLDAG-----ISLSVSAAGAAWHGATQVLOSATLKGKGTW	575
		: : : : : : : : : :	
Db	373	PVKLTLAGAQQGDIVATELPIPGASSGSLDVALASQARWTGATRAVDSLSI--DNATW	431
QY	576	VVNADSRVQDMSWRG--GRVEFQAPAPAEASKYKLTILTLDNGGVFVLTNTVVAQNDOLRV	634
		: : : : : : : : : : :	
Db	422	-----	401

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Dd	432	VMTD	NSNGALRLASDGSVDFQQA	EAGRFKCLMVDTL	AGSLFRMNVFADLGLS	DKLVV	491
QY	635	TCRADQ	HRVLVRNAGGEADSR	CARGLVLVHTQGG	GNATFRLANVKAVD	LGTWRYSLAED	694
Dd	492	MRDASQ	HELLVRNSGSEFAS	-GNTMLLVQTP	RGSAATFLANKDKVD	IGITYRRLAAN	550
QY	695	PKTHV	WSL-----	QR-----	AGQALSG	711	
Dd	551	GNQ	-WSLVGAKAPPAPQ	PGPQPGPQPPQ	PPQPPQPPQ	PEAPAPQPPAGRELSA	609
QY	712	AANA	AVNAADL---SSIALAES	NALDKRLGELRLRAD	AGGFWARTFSEFQQI	ISNRHARAY	768
Dd	610	AANA	AVNTGGVGLASTLWY	AEASNALSKRLGELRL	NPDAGGAWGRGFAQR	QQLDNRAGRF	669
QY	769	DQTV	SGLEIGLDRGWSAS	GRWYAGLLGYTYAD	RTYPGDGKKYKGLHV	GVYAAVVGDG	828
Dd	670	DQKV	AFELGADHAVAVAG	RWHLGGLAGYTRG	DGRFTGDGGGHTDS	VHVGGYATVIANS	729
QY	829	GYYL	DTVLRLGRYDQOY	NTAGTDCGRVTADY	RTSGAAWSLGGRRF	EPLNDWFAEPQAEV	888
Dd	730	GFYLD	ATLRASLENDFK	VAGSDGYAVKRYTH	GVGASLAEAGRRFA	HADGWLEFQAE	789
QY	889	MLWRT	SGRYRASNGLRV	KVDANTATLGRGLR	EGRRRIALAGGNIV	QPYARLGWTQEFKS	948
Dd	790	AVFR	VGGSYRAANGLR	VRDEGSSVLGRGLE	VYKRIELAGGRQV	OPYIKASVLQEFFD	849
QY	949	TCDV	RTNGIGHAGAGRH	RGVVELGAGVDAA	LCKGHNLYASYEY	AAADRINIPWSFHAGYR	1008
Dd	850	AGTV	RTNGIAHRTELRG	TRAEGLGMAALGR	HSLYASYEYKSGK	EPLAMPFTFHAGYR	909
QY	1009	SF	1010				
Dd	910	SW	911				

RESULT 9

AAE16183

ID AAE16183 standard; protein; 911 AA.

XX

AC AAE16183;

XX

DT 15-JUN-2007 (revised)

DT

26-MAR-2002 (first entry)

XX

DE Bordetella bronchiseptica pertactin outer membrane protein, p.68.

XX

KW Pertactin; PRN; outer membrane protein; vaccine; Bordetella infection;

KW

therapy; antibiotic; antibacterial; p.68; BOND_PC; P.68 Pertactin;

KW

P.68 Pertactin [Bordetella bronchiseptica]; G03515; G05524; G07155;

KW

G09405; G016020; G019867.

XX

OS Bordetella bronchiseptica.

XX

Key

FH

Region

FT

FT

FT

FT

XX

PN W0200190143-A2.

XX

PD 29-NOV-2001.

XX

PF 23-MAY-2001; 2001WO-EF006457.

XX

PR 25-MAY-2000; 2000US-0206969P.

XX

XX PA (INSP) INST PASTEUR.

XX PI Guiso-Maclouf N, Boursaux-Eude C;

XX DR WPI; 2002-097639/13.

DR N-PSDB; AAD26440.

DR PC:NCBI; gi39397.

DR PC:SWISSPROT; Q03035.

XX

PT Polypeptides containing polymorphisms of the repeated regions of

PT pertactin in Bordetella species, useful in immunogenic compositions for

PT treating infections caused by Bordetella and in diagnostic methods.

XX

PS Disclosure; Page 28; 47pp; English.

XX

CC The present invention relates to Bordetella bronchiseptica pertactin

CC (outer membrane protein) or their fragments. Pertactin (PRN) is used as

CC vaccine. Pertactin antibody is useful for treating Bordetella infections

CC and used to detect Bordetella antigens in biological preparations or in

CC purifying corresponding proteins, glycoproteins or their mixtures when

CC used in affinity chromatographic columns. Pertactin is useful as antigens

CC to identify antibodies to Bordetella in materials such as human or other

CC animal tissue and human or other animal cells, as well as biological

CC fluids, such as human or other animal body fluids, including human sera,

CC and to determine the concentration of Ab in those materials. Thus the

CC antigens can be used for qualitative or quantitative determination of

CC Bordetella in a material. The present sequence is B. bronchiseptica

CC pertactin outer membrane protein, p.68

CC

CC Revised record issued on 15-JUN-2007 : Enhanced with precomputed

CC information from BOND.

XX

Sequence 911 AA;

Query Match	25.0%;	Score 1293.5;	DB 5;	Length 911;
Best Local Similarity	36.5%;	Pred. No. 3e-68;		
Matches 329;	Conservative 118;	Mismatches 300;	Indels 155;	Gaps 23;

QV 247 GAPLAHPPLDRVAHVHAGQ-----DGKVTLREVALRAHGPOATGVYAYMPGS 294

[illegible]

D_b 27 GAAPAAAYADWNNOIIKAGEROHGIHIKOSDGAGVRTATGTTIKVSGROAGVLLNPAA 86

2

295 EITLOGGTVSVOG---DDGAGVVAGAGLLDALPPGGTVRLDGTTVS--TDGANTD--AVL 347

[illegible]

87 EI.BFONGSVTSSGOI.EDEGVBRREI.GTVTVKA-----GKI.VADHATI.ANVSDTRDDDDGIALY 142

LET THE GOVERNMENT BUY THE
MATERIAL TO BE USED IN THE
CONSTRUCTION OF THE
NEW BRIDGE

0:7 348 VPCDAPRAEVNTVIPTAKSLACVSAOHCCPVTIROTBIETACACAECTSVICEE--- 403

[illegible]

1 4 3 173 CE 03 09 07 3 DOCT 06
7 CC CV D I E B C A N U T W Y A P O E T Y H D G C I H T C E Y A B Y A R E P E R D D 1 0 8

DD VAGEQAQAS IADS I LQG----AGGV RVERGANV I VQRS I IVDGG L HIG I LQF L QFEDLFF I 190
 143

[illegible]

QY 404 -----PQSGSPASVDMQGGII-----IGNRAAGIALIHGS-ARLEGVA 443

[illegible]

D6 199 SRVVLGDTSVTAVPASGA-PAAVSVFGANELTVDGGHITGGRAAGVAAMDGAIVHLQ²⁵⁷

QY 444 VR---AEGSGS-----SAAQLA-----NG 459

[illegible]

D_b 258 IRRGDAPAGGAVPGGAVPGGFGPLLDGWYGVDSVDSVTLAQSI VEAPQLGA AIRAGRA 317

QY 460 TLVVSAGSLASQSGAISVTDTPCLKMPGALASSTVSVRLTDGATAQGGNGVFLQQHSTI 519

Db 318 RVTVGGSLSAPHGNVIETGGARRFPPA---SPLSITLQAGARQG--RALLYRVLPE 372

QY 520 PVAVAESGALARGDIVADGNKPLDAG-----ISLSVASGAAWHGATQVLQSATLKGKGTW 575

[illegible]

Db 373 PVKLTLAGGAQGGDIVATELPIPGASSGPLDVALASQARWTGATRAVDLSI-DNATW 431

Qy 1009 SF 1010
I:
Db 910 SW 911

RESULT 10
AAR25578
ID AAR25578 standard; protein; 922 AA.
XX
AC AAR25578;
XX
DT 15-JUN-2007 (revised)
DT 25-MAR-2003 (revised)
DT 08-JAN-1993 (first entry)
XX
DE Bordetella parapertussis P95 antigen precursor.
XX
KW Whooping cough; P70 antigen; P95 precursor protein; vaccination; BOND_PC;
KW pertactin precursor;
KW pertactin precursor [Bordetella parapertussis 12822]; prn; pertactin;
KW pertactin [Bordetella parapertussis];
KW pertactin precursor [Bordetella parapertussis]; G05515; G07155; G09405;
G016020; G019867.
XX
OS Bordetella parapertussis.
XX
FH Key Location/Qualifiers
FT Protein 35..643
FT /label= P70
FT Binding-site 260..262
FT /note= "motif associated with cell-cell adhesion"
FT Region 266..285
FT /note= "contains 5 direct, tandem repeats"
FT 575 610

FT Region 575. .612
 FT /note= "contains 9 direct repeats of Pro-Gln-Pro"
 FT Binding-site 712. .714
 FT /note= "motif associated with cell-cell adhesion"
 XX
 PN W09211292-A1.
 XX
 PD 09-JUL-1992.
 XX
 XX 23-DEC-1991; 91WO-GB002302.
 XX
 PR 21-DEC-1990; 90GB-00027901.
 XX
 PA (WELL) WELLCOME FOUND LTD.
 XX
 PI Charles IG;
 XX
 DR WPI; 1992-250033/30.
 DR N-PSDB; AAQ26509.
 DR PC:NCBI; gi129828.
 DR PC:SWISSPROT; P24328.
 XX
 PT Acellular vaccine for immunisation against whooping cough - comprises
 PT protein uncontaminated by B. para:pertussis components and capable of
 PT binding antibodies which bind native P70 antigen.
 XX
 PS Claim 1; Fig 1; 20pp; English.
 XX
 CC A cosmid library was constructed by transforming E.coli HB101 with
 CC recombinant cosmids prepared by partial digestion of B.parapertussis
 CC chromosomal DNA with Sau3A and cloning of 40-50kb fragments into the
 CC BamHI site of cosmid pHU79. The cosmids were screened with a 1.8kb Clai
 CC fragment from the prn gene of B.pertussis. The insert from one positive
 CC

CC colony, harbouring cosmid pBD811, was sequenced and found to contain an
 CC open reading frame encoding a 922 amino acid protein with calculated
 CC mol.wt. 95,177. This precursor protein ("p95") is processed in vivo to
 CC the P70 antigen of apparent mol. wt. 70,000 as determined by SDS-PAGE,
 CC but with actual mol.wt. 61kD. Antigenic fragments of the protein will be
 CC useful in developing an acellular vaccine against B.parapertussis.
 CC Preferred fragments include amino acids Pro577 to Pro612 or Ala574 to
 CC Pro612. (Updated on 25-MAR-2003 to correct PN field.)
 CC
 CC Revised record issued on 15-JUN-2007 : Enhanced with precomputed
 CC information from BOND.
 XX
 SQ Sequence 922 AA;

Query Match 24.7%; Score 1280; DB 2; Length 922;
 Best Local Similarity 35.9%; Pred. No. 2e-67;
 Matches 328; Conservative 118; Mismatches 301; Indels 166; Gaps 23;

QY 247 GAPLAAHPPDRVAAVHAGQ-----DGKVTILREVALRAHGPOATGVAYMPGS 294
 || ||: : : : ||: | | | : : | | | | | :
 Db 27 GAAPAAAYADWNQSIKAGERQHGIHIKQSDGAGVRTATGTTIKVSGRQAQGVLLNPAA 86

QY 295 EITLQGGTVSVQG---DDGAGVVAGAGLLDALPFGGTVRLDGTTVS--TDGANTD--AVL 347
 | : | | : | | | : | | : | | : | | : | | : | : | : | : | : | :
 Db 87 ELRFQNGSVTSSGQLFDEGVRRLFGTVTKA-----GKLVDADHATLIANVS DTRDDGGIALY 142

QY 348 VRGDAARAEVNTVIRTAKSAGVSAQHGGRTVRLQRTIETAGAGGISVLGFE---- 403
 | : | | : : : | : | | : | | : : : | | : : | : | : | : | :
 Db 143 VAGEQAQASIADSTLQG-----AGGVRVERGANVTVQRSTIVDGLHIGTLQPLQPEDLPP 198

QY 404 -----PQSGSGFASVDMQGGSIIT-----TGNRAAGIALTHGS-ARLEGVA 443
 | | | : | : | : | : | | | | | | : | : | : | : | : | :
 Db 199 SRVLGDTSVTAVPASGA--PAAVTFGANELTVDGGHITGGRAAGVAMDGAIVHLQRA 257

Qy 444 VR---AEGSGS-----SAAQLA----- 457
 : | | :
 Db 258 IRRGDAPAGGAVGGAVPGGFGPLLDGWYGVSDSTVDLAQSIIVEAPQLGAIR 317
 Qy 458 ---NGTLVVSAGSLASQCAISVTDTPKLMPGALASSTVSVRLTDGATAQGGNGVFLQ 514
 : | | | | : | | : | | | | :
 Db 318 AGRGARVTVSGSLAPHGNVIETGGARFPPPA---SPLSITLQAGARAQ--RALLY 372
 Qy 515 QHSTIPVALESGLARGDIVADGNKPLDAG-----ISLSVASGAAMHGATQVLOSATLG 570
 : | | : | | : | | | | : : : | | | | : : :
 Db 373 RVLPEPVKLTLAGGAQGGQGDIVATELPIPGASSGPLDVALASQARWTCATRAVDSLST- 431
 Qy 571 KGGTWVNADSRVQDMSMRG-GRVEFQAPAPASKYTLTLQTLDCNGVFLNTNVAAGQN 629
 | | | : | | : | | | | : | | : | | : | | :
 Db 432 DNATVMTDNSNVGALRLASDGSVDFQQPAEAGRFKVLMDVTLAGSGLFRMNVFADLGLS 491
 Qy 630 DQLRVTGRADGOHRVLVRNAGGEADSRGRLGLVHTOGQGNATFRLANVGKAVDLGTWRY 689
 | : | | | | | | | : | | : | | | | | | | : | | : | |
 Db 492 DKLVYMRDASGOHRLWVRNMSGSEPAS-GNTMLLVQTPRGSAATFLANKDKVDIGTYRY 550
 Qy 690 SLAEDPKTHVWSL-----QR----- 704
 | | : | | |
 Db 551 FLAANGNQ-WSLVGAKAPPAPKPAQPGQPQPGQPFPQPPQPPQPPQPPQPEAPA 609
 Qy 705 ---AGQALSGAANAAVNAADL---SSIALAESNALDKRLGELRLRADAGGFWARTFSER 757
 | | : | | | | | : | | : | | | | | | | | | | : | | : | |
 Db 610 PQQPAGRELSAANAAVNTGGVGLASTLWYAESNALSKRLGELRLNPDAGGAWGRGFAQR 669
 Qy 758 QQISNRHARAYDQTVSGLEIGLDRGWSASGRWYAGGLGYTYADRTYPGDGGGKVKGLH 817
 | | : | | | | | : | | : | | | | | | | : | | : | |
 Db 670 QQLDNRAGRFRFPQKAVAGFELGADHAVAVAGGRWHLGGLAGYTRGRDGRFTGDGGGHTDSVH 729
 Qy 817

QY 818 VGGYAAYVGGGYLDTVLRLGRYDQYNTAGTDGGRVTADYRTSGAAMSLEGGRRFELP 877
 ||||| |: : |:||| |: : :||:|| | ||| | ||| |||||
 Db 730 VGGYATYIANSFGYLDATLRASLENDKVVAGSDGYAVKGYRTHGVGVSLAAGRRFAHA 789
 QY 878 NDWFAEPQAEVMLWRTSGKRYRASNGLRVKVDANTATILGRGLRFGRRIALAGGNIVQPY 937
 : || ||||| : : | ||:||||| : : ||||| |:|| ||||| |||||
 Db 790 DGWLEPQAEALAVFRVGGGAYRAANGLRVRDEGGSSVLGRGLEVGKKRIELAGGRQVQPY 849
 QY 938 ARLGWTQEFKSTGDVYRTNGIGHAGAGRHGRVELGAGYDAAALGKGHNLYASYEYAAGDRIN 997
 : ||| | ||||| | | ||| |: ||||:|||||||: | : :
 Db 850 IKASVLQEFDGAGTVRTNGIAHRTLRTGTRAEJGLGMAAALGRGHSLYASYEYSKGPILA 909
 QY 998 IPWSFHAGYRYSF 1010
 : ||:|||||||:
 Db 910 MPWTFHAGYRYSW 922

RESULT 11

AAE16185
 ID AAE16185 standard; protein; 922 AA.

XX

AC AAE16185;

XX

DT 15-JUN-2007 (revised)

XX 26-MAR-2002 (first entry)

XX

DE Bordetella parapertussis pertactin outer membrane protein, p.70.

XX

KW Pertactin; PRN; outer membrane protein; vaccine; Bordetella infection;
 KW therapy; antibiotic; antibacterial; p.70; BOND_PC; pertactin precursor;
 KW pertactin precursor [Bordetella parapertussis 12822]; prn; pertactin;
 KW pertactin [Bordetella parapertussis];
 KW pertactin precursor [Bordetella parapertussis]; G05515; G07155; G09405;
 KW

KW GO16020; GO19867.
 XX
 OS Bordetella parapertussis.
 XX
 FH Key Location/Qualifiers
 FT Region 254. .304
 FT /note= "Pertactin region I"
 FT Region 564. .621
 FT /note= "Pertactin region II"
 XX
 PN W0200190143-A2.
 XX
 PD 29-NOV-2001.
 XX
 PF 23-MAY-2001; 2001WO-EP006457.
 XX
 PR 25-MAY-2000; 2000US-0206969P.
 XX
 PA (INSP) INST PASTEUR.
 XX
 PI Guiso-Maciouf N, Boursaux-Eude C;
 XX
 DR WPI; 2002-097639/13.
 DR N-PSDB; ARD26442.
 DR PC:NCBI; g1129828.
 DR PC:SWISSPROT; P24328.
 XX
 PT Polypeptides containing polymorphisms of the repeated regions of
 PT pertactin in Bordetella species, useful in immunogenic compositions for
 PT treating infections caused by Bordetella and in diagnostic methods.
 XX
 PS Disclosure; Page 34; 47pp; English.
 XX

Db 143 VAGEQAQSIADSTLQG-----AGGVVRVERGANVTQSRSTIVDGLHIGTLQPLQPEDLPP 198

Qy 404 -----PQSGGPASVDMQGGSTIT-----TGNRAAGIALTHGS-ARLEGVA 443
 | | | | | : | : | | | | | | : | :

Db 199 SRVLGDTSVTAVPASGA-PAAVVFGANELTVDGGHITGGRAAGVAAMDGAIVHLQRAI 257

Qy 444 VR---AEGSGS-----SAAQLA----- 457
 : | | | : | |

Db 258 IRRDAPAGGAVPGGAVPGGAVPGGFCPLLDGMVGDVSDSTVDLAQSIIVEAPQLGAAIR 317

Qy 458 ---NGLTVVSAGSLASAQSCAISVTDIPLKMPGALASSTVSVRLTDGATAQGGNGCVFLQ 514
 : | | | | : | : | | | | | | | | |

Db 318 AGRGARVTVSGGSLSAPHGNVIEIETGGARFPPEA---SPLSITLQAGARAQG--RALLIY 372

Qy 515 QHSTIPVALESGLARGDIADGNKPLDAG----ISLSVASGAAMHGATQVLQSATLG 570
 : | | : | | : | | | | | : : : | | | | : | | : | :

Db 373 RVLPEVKLTLAGGAQOGDIIVATELPPIPGASSGPLDVALASQARWTGATRAVDSLSI- 431

Qy 571 KGGTWVNADSRVQDMSMRG-GRVEFOAPAPEASYKTILTLOTLDGNGVFLNTNVAAGQN 629
 | | | : | | : | | | | | : | | : | | : | | : | :

Db 432 DNATWMTDNSNVGALRLASDGSVDFQQPAEAGRFKVLMDVTLAGSGLFRMNVFADLGLS 491

Qy 630 DOLRYTGRADGQHRVLVRNAGGEADSRGARGLGVHTQGGNATFRLANVGKAVDLGTWRY 689
 | : | | | | | | | | | : | | : | | | | | | | | | | |

Db 492 DKLVMRDASGQHRUWVRNSGSEPAS-GNTMLLVQTPRGSAATFLANKDGKVDIGITYRY 550

Qy 690 SLAEDPKTHVWSL-----QR----- 704
 | | : | | |

Db 551 RLAANGNGQ-WSLVGAKAPPAPKPAQFGPQGPQGPQPPQPPQPPQPPQPPQPPQPPQPPQ 609

Qy 705 ----AGQALSGAANAAVNAADL----SSIALAESNALDKRLRADAGGFWARTFSER 757
 | | : | | | | | | : : : | | | | | | | | | | | | | | | |

Db 610 PQQFAGRELISAANAARVNTGGVGLASTLWTAESNALSKRUGELRLNPDPAGGAWGRGFAQR 669

XX
KW B. bronchiseptica; P.68; outer membrane protein; piglet; probe;
KW atrophic rhinitis; alternative cleavage.

OS Bordetella bronchiseptica.

Key	Location/Qualifiers
Protein	35. .632
Peptide	/label= P.68
Region	260. .262
Region	/label= RGD tripeptide
Region	266. .279
Region	/label= Repeat_region
Region	570. .589
Peptide	/label= Repeat_region
Peptide	701. .703
Peptide	/label= RGD tripeptide

PN WO9217587-A1.

PD 15-OCT-1992.

PF 27-MAR-1992; 92WO-GB000561.

PR 27-MAR-1991: 91GB-00006568.

PA (WELL) WELLCOME FOUND LTD.

PT Charles TG:

DR WPT: 1992-366258/44.

DR N-PSDB; AAQ34566.

PT DNA encoding a Bordetella bronchiseptica protein - used for obtaining
PT vaccines for preventing respiratory diseases, partic. atrophic rhinitis
PT in pigs.

XX
PS Claim 1: Fig 1: 28pp; English.

XX
CC The sequence given is the P.94 antigen from B. bronchiseptica. The P.68
CC antigen is formed by alternative cleavage of this protein. P.68 is an
CC outer membrane protein with a molecular weight of 68 kD which is
CC associated with protection of piglets against atrophic rhinitis. The DNA
CC sequence encoding these proteins was derived by standard recombinant DNA
CC techniques using P.68 probes to isolate the entire P.94 sequence.
CC (Updated on 25-MAR-2003 to correct PN field.) (Updated on 27-AUG-2003 to
CC correct OS field.)

XX
SO Sequence 911 AA:

Query Match	24.6%;	Score 1274.5;	DB 2;	Length 911;
Best Local Similarity	36.1%;	Fred. No. 4.1e-67;		
Matches 326;	Conservative 119;	Mismatches 302;	Indels 155;	Gaps 23;

QY 247 GAPLAHPPLDRVAAVHAGQ-----DGKVTLRVALRAHQEQATGVYAYMPGS 294

bB 27 GAAPAAAYADNNNSIIKAGEROHGTHIKOSDGAGVRYTATGTTIKVSGCAOGLLENPAA 86

Qy 295 EITLGGTVSVQG---DDGAGWAGALLDALPPGGTVRLDGTVS--TDCANTD-AVL 347
| : | | : | | | : | : | : | : | : | :

Db 87 ELRFONGSTSSGLFDEGVRRFLGTVTKA----KGLVADHATLANVSDTRDDGIALY 142

Qy 348 VRGDAARAEVNVTLRTAKSLAAGVSAHGGRVTLRQTRIETAGAEGISVLGE----- 403
| : | : : : | : | : | | : : : | : | : | : |

Db 143 VAGEAOASITADSTLOG----AGGVVRVERGANVTYORSTIADGLHGTIGTLOPDELPDP 198

[illegible]

Qy 404 -----PQSGPFASVDMQGGSTTT-----TGNRAAGIALTHGS-ARLEGVA 443
 | | | : | : | | | | | : | :
 Db 199 SRVLGDTSVTAVPASGA-PAAVSVFGANELTVDDGGHITGGRACGVAAMDGAIVHLQRAIT 257
 Qy 444 VR---AEGSGS-----SAAQLA-----NG 459
 : | | : | |
 Db 258 IRRGDAPAGGAVPGGAVPGGFGPELLDGWYGVDSVSDTVDLAQSIWEAPQLGAIRAGRGA 317
 Qy 460 TLVVSAGSIALAQSGAISVDTPKLMPGALASSTVSVRLTDGATAQGGNGVFLQQHSTI 519
 : | | | | : | : | : | | | | : | :
 Db 318 RVTYSGGSLSAPHGNVIETGGARRPPPA---SPLSITLQAGARAQG--RALLYRVLPE 372
 Qy 520 PVVALESGALARGDIVADGNKPELDAG----ISLSVASGAAWHGATQVLQSATLKGKGTW 575
 | | : | | : | | | | : : : | | | | | : | : | :
 Db 373 PVKLTLAGGAQCGDIVATELPPIPGASSQGLDVALASQARWGTATRAVDSLSI-DNATW 431
 Qy 576 VVNADSRVQDMSMRG-GRVEFQAPAEASYKTLTLQTLDGNGVFVLTNTNVAAGQNDQLRV 634
 | : | | : : | : | | | : | : | | : | : | : | : | : | : | : | : | : | :
 Db 432 VMTDNSNVGALRLASDGSVDFQOPAEAGREFKCLMVDTLAGSGLFRMNVFADLGLSKLVV 491
 Qy 635 TCRADGQHRVLYRNAGEADSRGARGLVHTQGQCNATFRLANVKGAVDLGTWRYSLAED 694
 | | | | : | | | : | : | : | | | | | | | | : | : | : | : | : | :
 Db 492 MRDASGQHRLLVRNSGEPAS-GNTMLLVQTPRGSAATFTLANKDGKVDIGTYRYRLAAN 550
 Qy 695 PKTHVWSL-----QR-----ACQALSG 711
 | | | | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | :
 Db 551 NGQ-WSLVGAKAPKAPKAPQPGQPGQPGQPGQPGQPGQPGQPGQPGQPGQPGQPGQ 609
 Qy 712 AANAANVADL---SSIALAESNALDKRLELRADAGGPWARTFSERQQISNRHARAY 768
 | | | | | : | : | | | | | | | | | | | | | | : | : | : | : | : | :
 Db 610 AANAANTGGVGLASTLWVAESNALSKRLELRNPDAGGAWGRGFAQRQQLDNRAGRPF 669
 Qy 769 DQTVSGLEIGLDRGWSASGRWYAGLLGYTYADRTYPGDCGGKVKGLHVGGYAAVVGDC 828
 | | | | | | | | | |

Db 670 DQK VAGFELGADHAVA VAGGRWHLGLAGYTRGDRGFTGDGGHTDNVNVGGYPTVIANS 729
 Qy 829 GYLDTVLRGLGRYDQYNIAGTDGGRVTADYRTSGAAWSLEGGRRFELPNDFWFAEPQAEV 888
 Db 730 GFYLDATLRASLENDK VAGSDGYAVKGYRTHGVGASLEAGRRFAHADGWLFEPQAE 789
 Qy 889 MLWRTSGKRYRASNLIRVKVDANTATILGRGLRFGRRRIALAGGNIVQPYARLGWTQEFKS 948
 Db 790 AVFRVGRGSYRAANGLIRVDEGGSSVLGRGLGVGKRIELAGGRQVQPYIKASVLQEFDG 849
 Qy 949 TGDVRTNGIGHAGRGHGRVDELGAGVDAALGKGNLYASVEYAAAGDRINIPWSFHAGYRY 1008
 Db 850 AGTVRTNGIAHRTTELRGTRAEELGLGMAAALGRGHSLYASVEYSKGFKLAMPWTFHAGYRY 909
 Qy 1009 SF 1010
 Db 910 SW 911

RESULT 13

ABU23088

ID ABU23088 standard; protein; 768 AA.

XX AC ABU23088;

XX AC

DT 19-JUN-2003 (first entry)

XX 19-JUN-2003 (first entry)

DE Protein encoded by Prokaryotic essential gene #8615.

XX Antisense; prokaryotic essential gene; cell proliferation; drug design.

XX Antisense; prokaryotic essential gene; cell proliferation; drug design.

OS Bordetella pertussis.

vv

XX WO200277183-A2.
 XX
 XX 03-OCT-2002.
 XX
 XX 21-MAR-2002; 2002WO-US009107.
 XX
 XX 21-MAR-2001; 2001US-00815242.
 PR 06-SEP-2001; 2001US-00948993.
 PR 25-OCT-2001; 2001US-0342923P.
 PR 08-FEB-2002; 2002US-00072851.
 PR 06-MAR-2002; 2002US-0362699P.
 XX
 XX (ELIT-) ELITRA PHARM INC.
 PA
 XX Wang L, Zamudio C, Malone C, Haselbeck R, Ohlsen KL, Zyskind JW;
 PI Wall D, Trawick JD, Carr GJ, Yamamoto R, Forsyth RA, Xu HH;
 XX WPI; 2003-029926/02.
 DR N-PSDB; ACA26958.
 DR
 XX
 PT New antisense nucleic acids, useful for identifying proteins or screening
 PT for homologous nucleic acids required for cellular proliferation to
 PT isolate candidate molecules for rational drug discovery programs.
 XX
 PS Claim 25; SEQ ID NO 51012; 1766pp; English.
 XX
 CC The invention relates to an isolated nucleic acid comprising any one of
 CC the 6213 antisense sequences given in the specification where expression
 CC of the nucleic acid inhibits proliferation of a cell. Also included are:
 CC (1) a vector comprising a promoter operably linked to the nucleic acid
 CC encoding a polypeptide whose expression is inhibited by the antisense
 CC nucleic acid; (2) a host cell containing the vector; (3) an isolated
 CC nucleotide as its essential chain component in inhibited by the

CC polypeptide or its fragment whose expression is inhibited by the
 CC antisense nucleic acid; (4) an antibody capable of specifically binding
 CC the polypeptide; (5) producing the polypeptide; (6) inhibiting cellular
 CC proliferation or the activity of a gene in an operon required for
 CC proliferation; (7) identifying a compound that influences the activity of
 CC the gene product or that has an activity against a biological pathway
 CC required for proliferation, or that inhibits cellular proliferation; (8)
 CC identifying a gene required for cellular proliferation or the biological
 CC pathway in which a proliferation-required gene or its gene product lies
 CC or a gene on which the test compound that inhibits proliferation of an
 CC organism acts; (9) manufacturing an antibiotic; (10) profiling a
 CC compound's activity; (11) a culture comprising strains in which the gene
 CC product is overexpressed or underexpressed; (12) determining the extent
 CC to which each of the strains is present in a culture or collection of
 CC strains; or (13) identifying the target of a compound that inhibits the
 CC proliferation of an organism. The antisense nucleic acids are useful for
 CC identifying proteins or screening for homologous nucleic acids required
 CC for cellular proliferation to isolate candidate molecules for rational
 CC drug discovery programs, or for screening homologous nucleic acids
 CC required for proliferation in cells other than *S. aureus*, *S. typhimurium*,
 CC *K. pneumoniae* or *P. aeruginosa*. The present sequence is encoded by one of
 CC the target prokaryotic essential genes. Note: The sequence data for this
 CC patent did not form part of the printed specification, but was obtained
 CC in electronic format directly from WIPO at
 CC ftp.wipo.int/pub/published_pct_sequences

XX
 SQ Sequence 768 AA;

Query Match 23.9%; Score 1238.5; DB 6; Length 768;
 Best Local Similarity 38.3%; Pred. No. 4.7e-65;
 Matches 334; Conservative 95; Mismatches 281; Indels 163; Gaps 30;

QY 195 AAQGQASIIIDTLQSLGFIADGGSISVAGGSI---DMDMGCFPPPPPPPLFGAPLA 251

Db	2	AGEQAQAS	TADSTLQG--AGGVQIERGANVTQVRS	AI	VDGGLHICALQSLQFEDLP----	55				
Qy	252	AHPPLDR	VAHVAGQDGKVTIRE---VALRAHG-PQATG	YVAYMPGSEITLQGGTVSVQG	307					
Db	56	-----	-----PSRVLRD	TNVITVPASGAPAAVSU---LGASEL	ITLDGGHIT--G	95				
Qy	308	DDGAGV	VAGAGLLDALPPGGT	VRLDGTTVSTDGANTDAVL	VRGDAARAEVVNTVLR	TAKS	367			
Db	96	GRAAGVAA-----	MOGAVVHLQRA	TIR-----	RGDA-----	121				
Qy	368	LAAGSAQH	GRVRLTROTRIETAGAGAE	GISVLGFEPQSGGPA-----	SVDMOGGSITT	422				
Db	122	-PAG-GAV	PGGAV-----	PGGAVPG-----	GFGP-GGFGVL	DGWYGYDVSGSSVE- 164				
Qy	423	TGNRAAG	IALTHGSARLEGVAVRAEG	SGSSAAQLANGTILV	SAGSILASASGAI	SVTDTP	482			
Db	165	-----	LAQSI	VEAPELGAIRV-GRGA-----	RVTVSGSL-SARPHNV	VIETGGA	207			
Qy	483	LKLMPGAL	ASSTVSVRLTDGATA	OGNGVFLQOHS	TIPVAVALES	GALARGDIVA-----	537			
Db	208	RFAFQA---	APLSITLQAGAHAGG--KALLY	PGPAGAREAD	ADRGAOGD	IVATELPS	262			
Qy	538	-DGNK--	PLDAGISL	SVASGA	AHWGATQVLQ	SATLKGCTGVV	NADSRVODMSMRG-GRV	593		
Db	263	IPGTSIG	PLD---VALASQAR	WTGATRAVD	SLSI-DNATW	MTDNSNVGAL	RLASDGSV	317		
Qy	594	EFQAPAE	ASKYTLTLQ	LDGNGV	FLVNTNVAAGOND	QLRV	TGRADGQHRVLVR	NAGGEA	653	
Db	318	DFQQPAE	AGRFKVL	TNVL	TLAGSG	GLFRMV	FADLGLSD	KLIVMODASQ	QHRLWVRNSGSEP	377
Qy	654	DSRGARL	GLVHTQOG	GNATFL	NVANGK	AVDLG	TWYS	SLAEDPK	THVWSL-----	702

Db 378 ASANTLL-LVQTPLGSAFTTLANKDGKVDIGTYRYRLAANGNQ-WSLVGAKAPPAPKP 435

Qy 703 -----QRAGALSGAANAAVNAADL----SSIALAESNALDKRL 737
 ||: || ||||| : ||: ||||| |||

Db 436 APQPGPPPPPPQPEAPAPQPPAGRELSAANAAVNTGGVGLASTLWYAESNALSKRL 495

Qy 738 GELRLRADAGGPWARTFSERQISNRHARAYDQTVSGLEIGLDRGWSASGGRWYAGLLG 797
 ||||| |||| | :|||: || | :|||: || | : ||||: ||| |

Db 496 GELRLNPAGGAWGRGFAQRQQLDNRAGRFDQKVGAFELCADHAVA VAGGRWHLGLLAG 555

Qy 798 YTYADRTYPGDDGGKVLHVGGAAYVGDGGYYLDTVLRGLGRYDQQYNIAGTDGGRVTA 857
 || | ||||| : ||||| | : |||| || | : : ||||| |

Db 556 YTRGDRGTGDDGGHTDSVHVGGAITYIADSGFYLDATLRASRLNDFKVGSDGYAVKG 615

Qy 858 DYRTSGAAWSLEGGRRFELPNDFWFAEPQAEVMLWRTSGKRYRASNLRVKVDANTATLGR 917
 ||| | ||| |||| : || ||||| : || ||||| ||| : ||||| : || |||

Db 616 KYRTHGVGASLEAGRRFTHADGWFLFPQAE LAVFRAGGGAYRAANGLRVDRDEGGSSVLGR 675

Qy 918 LGLRFRRIALAGGNIVQPYARLGTQEFKSTGDRVINGIGHAGAGRHGRVELGAGVDAA 977
 ||| :||| ||||| |||| : |||| | |||| | | |||| | ||

Db 676 LGLEVGRKRIELAGGRQVQYIKASVLQEFDCAGTVHTNGIAHRTELRGTRAEGLGMAAA 735

Qy 978 LGKGNHLYASYEYAAGRINIPWSFHAGYRYF 1010
 ||: ||||| ||||| : ||: ||||| ||||| :

Db 736 LGRHSLYASYEYSKPKLAMPWTFHAGYRYSW 768

RESULT 14

ADZ46890

ID ADZ46890 standard; protein; 759 AA.

XX

AC ADZ46890;

XX

XX

DT 15-JUN-2007 (revised)
 DT 30-JUN-2005 (first entry)
 XX
 DE BASB232 polypeptide encoded by Orf22.
 XX
 KW BASB232; vaccine; bacterial infection; bordetella pertussis infection;
 KW antibacterial; BOND_PC; putative autotransporter;
 KW putative autotransporter [Bordetella pertussis]; BapC protein;
 KW BapC protein [Bordetella pertussis Tohama I]; G05524; G07155.
 XX
 OS Bordetella pertussis.
 XX
 PN W02005032584-A2.
 XX
 PD 14-APR-2005.
 XX
 PF 01-OCT-2004; 2004WO-EP011082.
 XX
 PR 02-OCT-2003; 2003GB-00023112.
 PR 02-OCT-2003; 2003GB-00023113.
 XX
 PA (GLAX) GLAXOSMITHKLINE BIOLOGICALS SA.
 XX
 PI Castado C, Denoel P, Godfroid F, Poolman J;
 XX
 DR WPI; 2005-296056/30.
 DR N-PSDB; ADZ46889.
 DR PC:NCBI; gi3411270.
 XX
 PT Immunogenic composition, comprises polypeptide of Bordetella pertussis or
 PT mixture of different B.pertussis, antigens, useful in Bordetella disease
 PT treatments.
 XX
 NC

PS Claim 3; SEQ ID NO 44; 172pp; English.

XX

CC The invention relates to BSB232 polypeptides (SEQ Group 2), and the
CC polynucleotide sequences (SEQ Group 1) encoding them. The invention also
CC relates to an immunogenic composition, comprising a B. pertussis BSB232
CC polypeptide or a mixture of 2-9 or 10 different B. pertussis antigens,
CC chosen from Bordetella autotransporter protein, Bordetella iron
CC acquisition protein, Bordetella lipoprotein, Bordetella adhesin and
CC Bordetella toxin/invasin, and an excipient. Also described is a vaccine
CC comprising the above immunogenic composition. The immunogenic composition
CC is useful in the preparation of a medicament for use in the treatment or
CC prevention of Bordetella disease such as whooping cough. The immunogenic
CC composition and vaccine are useful for treating or preventing Bordetella
CC infections such as B. pertussis, B. parapertussis or B. bronchiseptica
CC infections, by administering the vaccine to a host. This sequence
CC represents a BSB232 polypeptide of the invention.

CC

CC Revised record issued on 15-JUN-2007 : Enhanced with precomputed
CC information from BOND.

XX

SQ Sequence 759 AA;

Query Match 23.0%; Score 1192.5; DB 10; Length 759;
Best Local Similarity 37.3%; Pred. No. 2.5e-62;
Matches 286; Conservative 99; Mismatches 277; Indels 105; Gaps 19;

QY 328 TVRLDGTTVSTD-GANTDAVLVRGDAARAEEVNTVLTAKSLAACVSAQ---HGGRTVTLR 383

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Db 14 SIRVGQGVVQGMGANNVAVATG-SCKVAIENAEILLGASGMATFGAQVDMKGGRI LAH 72

QY 384 QTRITAGAGARGISVLGFEPQSG---SGFASVDMQGSITTTGNRAAGIAL-----THG 435

| | : | : | | : : : : | | |||: |

Db 73 NTNILGSQYADG-----PYGGVVVTEQGVNLEGAKVSATGLGAAGLWLLGDKDTSP 125

QY	436	SARLEGVVRAEGSGSSAAQLA---NGTLVVSAGSLASQSGAISVTDP-----482
Db	126	RASLRNTDVHGE-----VAIALGFENGSEANISGGSL-SVEDGAVLTLTPDAVEYYDYA 179
QY	483	--LKMPGALASSTVSURLTDGATAQGCGNVFLQQHSTIPVAVALESGALARGDIV----536
Db	180	LSMEHLPADAPLTPVRVTLSDGARSG--ETILAHGGLLPMTLRLSSGVDARGDIVTLPP 237
QY	537	-----ADGNKPL-----DAGI 544
Db	238	SAPPDSAEQFPAEPEPDALEPDAAAQSDAKANARVMAQVDGGEPVAVPIAPSHPDAPI 297
QY	548	SLSVASGAAMHGATQVLQSATLGRGGTWMVNADSRVQDMSMRGRGEVFQAPA-PEASYKT 606
Db	298	DVFIDSGAQWRGMKTIVNALRI-EDGTWTVTGSSITVNSLHLQACKVAYATPAESDGFEKH 356
QY	607	LTLQTLDGNGVFVINTINVAAGQNQLRVTRGADGQHRVLVRNAGGEADSRGARGLVHTQ 666
Db	357	LRVKTLSGSLGFEMNASADLSGDLLVYSDEASGHKVLRVGAGTEPTGVES-LTLVELP 415
QY	667	GQGNATFRLANVKADVLTGWRYSLAEDPKTHWSLQRAGQALSQAANAAVNAADL---S 723
Db	416	EGSQTKFTLIANRGGVWDAGAIFYRLT--PDNGVWGLETQS-QSAVANAAALNTGCVGAAS 472
QY	724	STALAESNALDKRKLGEURLRADAGFPWARTSEROOISNRHARYDOTVSGLETGLDRGW 783
Db	473	SIWYAEGNALSKRLGEURLDPGAGGFWGRTFAQKQOLDNKAGRFRFDQKYVGFELGADHAI 532
QY	784	SASGGRWYAGLLGYTYADRTYPDGGGKGKVLHVGGYAAAYVGGGGYYLDTVLRLGRYDQ 843
Db	533	AQQQGRWHYGLLGYTRARRSFIDDGAGHTDSAHI GAYAAYVADNMGFYDFSTILRASREN 592

Qy 844 QYNTAGTDGGRVTADYRTSGAAWSLEGGRFELPNDWFAEPQAEVMLWRTSGKRYRASNG 903
 : : || | || : | : || : || : | : || ||| : || : ||| : |
 Db 593 DFTVTADAVSRGKYRANGVGAILEAGKRFTHDGNFVEPQSEVSLFHASGGTYRAANN 652
 Qy 904 LRVKVDANTATLGRGLRFGRRITAGGNIVQPYARLGTQEFKSTGDRVINGIGHAGAG 963
 | || : | : ||| ||| | : |||| | |||| | |||| |
 Db 653 LSVKDEGGTSVLRGLAAGRIDLKDRVIQPYATLSWLQEFKGVTVIRNGYGLRTDL 712
 Qy 964 RHGRVELGAGVDAALGKGHNLYASYEYAAGDRINIPWSFHAGYRYSF 1010
 || || : |||| || || |||| | : : || : || |||| : :
 Db 713 SGGRAELALGLAALGRGHQLTYSYAYAKGNKLTLPWTFHLGYRYTW 759

RESULT 15
 ADZ46892
 ID ADZ46892 standard; protein; 515 AA.
 XX
 AC ADZ46892;
 XX
 DT 30-JUN-2005 (first entry)
 XX
 DE BASB232 polypeptide encoded by Orf23.
 XX
 KW BASB232; vaccine; bacterial infection; bordetella pertussis infection;
 KW antibacterial.
 XX
 OS Bordetella pertussis.
 XX
 PN WO2005032584-A2.
 XX
 PD 14-APR-2005.
 XX
 PF 01-OCT-2004; 2004WO-EP011082.
 vv

XX 02-OCT-2003; 2003GB-00023112.
PR 02-OCT-2003; 2003GB-00023113.
XX
XX (GLAX) GLAXOSMITHKLINE BIOLOGICALS SA.
PA
XX Castado C, Denoel P, Godfroid F, Poolman J;
PI
XX WPI; 2005-296056/30.
DR N-PSDB; ADZ46891.
DR
XX Immunogenic composition, comprises polypeptide of Bordetella pertussis or
PI mixture of different B.pertussis, antigens, useful in Bordetella disease
PT treatments.
PT
XX Claim 3; SEQ ID NO 46; 172pp; English.
PS
XX The invention relates to BASB232 polypeptides (SEQ Group 2), and the
CC polynucleotide sequences (SEQ Group 1) encoding them. The invention also
CC relates to an immunogenic composition, comprising a B. pertussis BASB232
CC polypeptide or a mixture of 2-9 or 10 different B. pertussis antigens,
CC chosen from Bordetella autotransporter protein, Bordetella iron
CC acquisition protein, Bordetella lipoprotein, Bordetella adhesin and
CC Bordetella toxin/invasin, and an excipient. Also described is a vaccine
CC comprising the above immunogenic composition. The immunogenic composition
CC is useful in the preparation of a medicament for use in the treatment or
CC prevention of Bordetella disease such as whooping cough. The immunogenic
CC composition and vaccine are useful for treating or preventing Bordetella
CC infections such as B. pertussis, B. parapertussis or B. bronchiseptica
CC infections, by administering the vaccine to a host. This sequence
CC represents a BASB232 polypeptide of the invention.
XX
SQ Sequence 515 AA;

Query Match	21.7%;	Score 1122.5;	DB 10;	Length 515;
Best Local Similarity	45.7%;	Pred. No. 2.3e-58;		
Matches	237;	Conservative 65;	Mismatches 192;	Indels 25; Gaps 7;
QY	513	LOQHSTIFVAVALESCALARGDIV-----ADG-NKPLDAG-----ISLSVASG	554	
Db	1	LRQITPVPVRLVLRGAAVAQGVVRAPETAPKDFGTFVPRGLRVGLDQAPLELDVADG	60	
QY	555	AAWHGATQVLQSATLGKGGTWTWVNADSRVQDMSMRGGRVFEQAPAPESAYKTLTLQTLDDG	614	
Db	61	AQWHGATQSLDRALCAGAGQWRMSAASVGELSMEPGAAVVFGDAAGPGFQTLTVRTLTAAG	120	
QY	615	NGVFVLNTVAAGQNDQLRVTGRADGQHRVLVRNAGGEADSRGARLGLVHTQGGQNATFR	674	
Db	121	AGSFEMRADAALHADQLVVTDOAEGHRVWLRAPAGAEPK-AQAVLVRAPADGKASFE	179	
QY	675	LANVGKAVDLGTWRYSLAEDPKTHVWSLQAGALSQAANAANAADLSIA---LAESN	731	
Db	180	LDGSDGRADFQTYRYGLAQOP--GGAWGLVRTG--YSSTAAALDTGGGLGAVOGLWYAESN	236	
QY	732	ALDKRLGELRLRADAGGPWARTFSERQOISNRHARAYDQTVSYGLEIGLDRGWSASGRWY	791	
Db	237	ALGRKMGEELRLNPDAGGAWGRAFSQRQRI SPRAGRHFQQGVSGIELGADRAWFVAGGRWH	296	
QY	792	AGLLGYTYADTYPDGGGKVKGLHVGVYAAVYDGGYYLDTVLRLGRYDQOYNIAGTD	851	
Db	297	AGWLLGYTRASRGFSQGGKGHTDSVHVGGVATYTGANGVYADATLURASRFENSFDAPGWA	356	
QY	852	GGRVTADYRTSGAANSLEGGRRPELNDWFAPQAEVMLWRTSGKRYRASNGRLRVKVDAN	911	
Db	357	GRTVSGSVRANGVGVTLGARRLALDRHWFEVQAEI AWFRAGGTTYASNGLRITDDGG	416	

Qy	912	TATLRLGLRFGRRIALAGNIVQPYARLQWTOEFKSTGDRVRTNGIGHAGAGRHGRVELG	971
Db	417	TSLQARVGAQAGRRFDLRGGAVVQPYAQLSWVQELKGVSTVVRTNGIAHRTDLGAGRVELG	476
Qy	972	AGVDAALGKGHNLIYASYEYAAAGDRINIPWSFHAGYRYSF	1010
Db	477	LGVAALGKGHNLIYASYEYAHGPRLSLPWTIVQLGYRYAW	515

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 Job time : 101.58 secs